

Introduction

This collection of 15 student laboratory activities, teacher demonstrations and extended homework assignments is designed to provide the teacher with a fingertip download of all of the essential ingredients for a successful classroom experience.

Each of these exercises has been personally field tested by the author and have proven over time to be some of the finest teaching tools available to communicate sometimes difficult science concepts to our students in the middle and high school grade levels.

The activities include a:

- **TEACHER'S COPY** which links the lesson to one or more of the National Science Education Standards and also provides tips and suggestions (**always high-lighted in red ink**) to get you through what may be stumbling blocks in some of the more detailed presentations. Here, too, are included **Materials Sources** and pricelists for all of the supplies and equipment not normally encountered in the typical middle or high school laboratory. Where appropriate, URL's for **topic-related websites** are included to provide enrichment activities for the inquisitive student at home or for those in computer-equipped classrooms with Internet access.
- **STUDENT'S COPY** which can be downloaded and printed out in multiple copies for immediate handouts in the classroom
- **STUDENT'S ANSWER SHEET** that also can be directly printed offline. This provides a systematic and structured response system that allows the teacher quick visual access to the students' grasp of the concepts under consideration.
- **TEACHER'S ANSWER SHEET** that provides acceptable student responses (**again, always high-lighted in red ink**) at a glance.

~The Author~

Mike Mathras has been the Science Department Chairman at The Springfield High School of Science & Technology (Springfield, Massachusetts) since its inception in 1996. He has been teaching some form of the physical sciences, including space science and astronomy for the past 33 years in the Springfield system. He looks forward to your comments and queries regarding this library of activities, so that your input can be used to revise and subsequently improve the instructional value of these tools for all. Feel free to contact him at mmathras@charter.net

